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Running head: parental physical activity beliefs

Identifying parents' perceptions about physical activity: A qualitative exploration of salient behavioural, normative, and control beliefs among mothers and fathers of young children

Abstract

Drawing on the belief-based framework of the Theory of Planned Behaviour, this study employs qualitative methodology involving individual and group interviews to examine the beliefs associated with regular physical activity performance among parents of young children (N = 40). The data were analysed using thematic content analysis. A range of advantages (e.g., improves parenting practices), disadvantages (e.g., interferes with commitments), barriers (e.g., time), and facilitators (e.g., social support) to performing physical activity are identified. Normative pressures are also identified as affecting parents' activity behaviour. These identified beliefs can be used to inform interventions to challenge inactivity among this at-risk group.

Key words: parenthood, exercise behaviour, Theory of Planned Behaviour, beliefs

Introduction

In Australia, 70% of individuals aged 15 years and over are classified as sedentary or having low exercise levels (Australian Bureau of Statistics, 2006), which is higher than global rates that estimate 60% of the population fail to achieve the minimum recommended physical activity (PA) level (World Health Organization, 2003). In response to the sedentary lifestyles of the Australian population, and the well-established links between regular moderate-intensity PA and health (United States Department of Health and Human Services, 1996), many government agencies have become proactive in encouraging ‘active living’. These initiatives are illustrated in campaigns and publications such as “Be Active Australia: A framework for Health Sector Action for Physical Activity 2005-2010” (National Public Health Partnership, 2005), and “An active way to better health: National physical activity guidelines for adults (Australian Government Department of Health and Aging, 2004). Despite these current action plans, over the last 10 years interventions aimed at increasing PA-related behaviour have failed to change significantly the proportion of people reporting low exercise levels (Australian Bureau of Statistics, 2006).

One concern in the physical activity domain is the limited attention given to exploring factors that influence PA behaviour within defined population groups. Recent research suggests that parents with dependent children are a group at risk for inactivity (Bellows-Riecken & Rhodes, 2008), affecting both mothers’ (Bell & Lee, 2005; McIntyre & Rhodes, 2009) and fathers’ (Burton & Turrell, 2000) PA-related behaviour. Additionally, research suggests that parents of young children (i.e., younger than five years of age) are most at risk (Nomaguchi & Bianchi, 2004). However, research into understanding parental PA is scarce. Thus, there is currently little evidence to base interventions for increasing PA among this specific at-risk population (Bauman, Bellow, Vita, Brown, & Owen, 2002; Bellows-Riecken & Rhodes, 2008). Furthermore, there is a gap in the literature applying theoretical approaches

to the understanding of parental PA. If PA is to be promoted as a way of improving parental health and well-being, having an understanding of the underlying cognitive processes that guide parental PA decision-making is needed. This understanding will ensure more effective intervention work as the health promotion action will be tailored to the specific group (Müller-Riemenschneider, Reinhold, Nocon, & Willich, 2008), which is important given that in Australia over one million families have at least one child aged under 5 years (Australian Bureau of Statistics, 2009).

Several theoretical approaches that examine the mechanisms underpinning the decision-making for health behaviour have been applied within the PA domain, such as the health belief model (e.g., Becker et al., 1977), transtheoretical model (e.g., Prochaska & DiClemente, 1983), and social cognitive theory (e.g., Bandura, 1986). Although these models give some consideration to the role of benefits and barriers to performing a given behaviour, they tend to ignore the role of social influences on behavioural performance. The theory of planned behaviour (TPB; Ajzen, 1991), the most common decision-making model that has guided the majority of the research in the health (see Conner & Sparks, 2005) and PA (see Hagger, Chatzisarantis, & Biddle, 2002) domains, acknowledges the role of social influences along with advantages and barriers for behavioural performance. Given that parents are embedded within various social networks (e.g., family unit, couple relationship), social influences might be especially salient for mothers and fathers of young children. Thus, the TPB was considered to be a useful theoretical approach to adopt for this study.

The TPB is based on the premise that intention is the most proximal predictor of behaviour, with intention being determined by three constructs: attitude (i.e., positive or negative evaluations of the behaviour), subjective norm (i.e., perceptions of pressure from others to perform the behaviour), and perceived behavioural control (i.e., the amount of control one perceives they have over behavioural performance; also believed to influence

behaviour directly) (Ajzen, 1991). An important feature of the TPB is its suggestion that the antecedents of attitude, subjective norms, and perceived behavioural control are corresponding salient beliefs reflecting the underlying cognitive structure that determines an individual's intention and behaviour (Ajzen, 1991). Attitudes toward the behaviour are thought to be determined from the individual's beliefs about the likely outcomes of the behaviour (behavioural beliefs) and the evaluations, either positive or negative, of these outcomes (outcome evaluation). Subjective norms are concerned with the individual's beliefs about the normative expectations of important referents either approving or disapproving of performing a given behaviour (normative beliefs) and the motivation to comply with significant others' expectations (motivation to comply). Perceived behavioural control is based on the individual's beliefs of the extent to which internal and external factors may inhibit or facilitate performance of a given behaviour (control beliefs) and the perceived power of these factors to inhibit or facilitate behavioural performance (perceived power) (Ajzen, 1991). The belief basis of the TPB has been used successfully to understand PA-related behaviour within defined population groups including adolescent (Hamilton & White, 2007), older adult (Conn, Tripp-Reimer, & Maas, 2003), and clinical populations (White, Terry, Troup, & Rempel, 2007) in which the belief-based components of the TPB have significantly predicted PA behaviour.

The aim of this study is to explore the beliefs underlying mothers' and fathers' activity performance, given parents' risk for inactivity. Specifically, this study aims to identify, using qualitative methods, the commonly held behavioural, normative, and control beliefs related to regular moderate PA performance among parents of young children. Exploring regular moderate-intensity PA was chosen based on the empirical literature providing clear evidence that health benefits for adults occur with regular amounts of physical activity and at levels of moderate intensity (Australian Government of Health and

Aging, 2004; United States Department of Health and Human Services, 1996). This insight into parents' beliefs will inform researchers who aim to develop interventions to promote PA in parents of young children by providing the basis for the beliefs to target in campaigns aimed at increasing PA. Furthermore, this information will provide the necessary information that is needed for developing the first steps of a TPB-based intervention (i.e., this study serves as the elicitation phase of identifying the modal salient beliefs of the research population). These beliefs can then be used in further formative research in which all the TPB variables (i.e., attitude, subjective norm, and perceived behavioural control), including the modal salient beliefs, are assessed to understand parents' decision-making processes for engaging in regular PA. The beliefs that best discriminate between those mothers and fathers who perform regular activity and those who do not can then be considered for use in resultant intervention work (see Ajzen, 2006; Sutton, 2002). Thus, given that effective TPB-based programs of behavioural intervention rests on the accurate measurement of its indirect variables (i.e., attitude, subjective norm, and perceived behavioural control), the salient behavioural, normative, and control beliefs for the behaviour under investigation among the target group must be first identified (Ajzen, 2006). Identifying parents PA-related beliefs using the TPB framework, therefore, can inform the development of survey instrumentation to explain as well as predict parental PA behaviour.

Methods

The research was carried out between September 2008 and March 2009 in South East Queensland, Australia. The study was approved ethical clearance by the University Human Research Ethics Committee (reference number 0800000516).

Participants

A purposeful sampling method (Patton, 2002) was used to recruit individuals aged 18 years and over who were parents of at least one child younger than 5 years of age. Parents

were excluded if they were pregnant and/or had a medical condition that prevents performing PA at the recommended levels. This study aimed to ensure that a broad range of different experiences and perceptions was identified; as such, consideration was given to the inclusion of information rich cases that reflect the population diversity. Maximum variation sampling (Patton, 2002), therefore, was used to ensure respondents ranged in age, gender, number of dependents, marital status, education level, employment status, and level of physical activity. Participants were recruited via snowball sampling (Patton, 2002), with sample size being dependent on theoretical saturation (Strauss, 1987).

The sample ($N = 40$) included both females ($n = 21$) and males ($n = 19$) who were all independent of each other (i.e., participants were not in a couple relationship). The parents were all Caucasian and ranged in age from 23 to 49 years of age, with an average age of 35 years. Most of the participants were in a partnered relationship ($n = 34$). The level of education varied among the parents in which 6 had a junior certificate, 8 had a senior certificate, 6 had a trade/diploma certificate, 16 had an undergraduate degree, and 4 of the parents had postgraduate qualifications. Seventeen out of the 19 fathers were in full-time paid work, with 1 being in casual paid employment and 1 occupying home duties. Work status varied more among the mothers in which 3 engaged in full-time work, 6 engaged in part-time work, 3 were casually employed, 8 occupied home duties, and 1 of the mothers was a student. Among the parents, 16 had one child, 14 had two children, 3 had three children, and 7 of the parents had four children. In addition, to ensure that that sample varied somewhat on the key demographic characteristic of PA, parents were asked to indicate the level of PA they currently engage in on a single-item rating scale ranging from 'I never engage in physical activity' to 'I regularly engage in physical activity'. Just under half of the parents (17 out of 40) indicated that they were regularly active whereas the remaining 23 parents indicated they

either sometimes engaged in PA (17 out of 40), rarely engaged in PA (5 out of 40), or never engage in PA (1 out of 40).

Design and Procedure

The study employed a qualitative descriptive research design (Sandelowski, 2000) involving individual and group interviews. In total, 27 interviews including eight group discussions and 19 individual interviews were conducted with the size of the group interviews ranging from two to four participants. The use of both individual and group interviews, we believe, offered a way of strengthening the study design by providing a means of triangulating data obtained via the different interview methods (Patton, 2002). To eliminate the potential of gender differences influencing the sharing within group interviews (Krueger & Casey, 2000), homogenous groups in relation to gender were formed. Interviews, therefore, were separated into male and female groups.

To guide the interviews, a semi-structured discussion/interview guide was developed according to TPB guidelines (see Ajzen, 2006). The questions were designed to stimulate discussion about parents' PA beliefs and probe questions were used to gain rich and detailed information (Krueger, 1998). The questions included:

1. Behavioural Beliefs

- What do you see as the advantages of your doing regular moderate physical activity?
- What do you see as the disadvantages of your doing regular moderate physical activity?
- Is there anything else you associate with doing regular moderate physical activity?

2. Normative Beliefs

- Who are the individuals or groups of people that would approve or want you to do regular moderate physical activity?

- Who are the individuals or group of people that would disapprove of your doing regular physical activity?
- Are there any other individuals or groups that come to mind when you think about doing regular moderate physical activity?

3. Control Beliefs

- What are the factors that would make it easier for you to do regular moderate physical activity?
- What are the factors that would make it difficult for you to do regular moderate physical activity?
- Are there any other issues that come to mind when you think about the difficulty of doing regular moderate physical activity?

The interviews were held in a setting (e.g., local library, workplace, home) and at a time of day convenient for the participant. The first author conducted all interviews which averaged 1-hour in length, and all discussions were audiotaped. For the duration of the study, a reflexive journal was kept by the interviewer in which key ideas expressed, comparisons and contrasts among the interviews, and possible refinement of questions were recorded (Ahern, 1999; Lincoln & Guba, 1985).

Data analysis

The individual and group discussions were transcribed verbatim. Data were analysed using thematic content analysis (Braun & Clarke, 2006; Joffe & Yardley, 2004) in which broad categories were identified and coded according to the research questions. The broad concepts were refined into themes from patterns in the data and from concepts which frequently occurred across categories and sessions. An iterative process was used with data being coded and recoded to accommodate new emerging themes until no new themes resulted (Miles & Huberman, 1994; Strauss, 1987) and two final group interviews (one male and one

female) confirmed previously emerging themes and ensured that theoretical saturation had been attained (Miles & Huberman, 1994). To ensure quality control in the data, confirming summaries occurred throughout focus group/interview discussions to validate participants' responses (credibility), a community sample was utilised to enhance the external validity of the study (transferability), and disinterested peers participated in data reduction to ensure that emerging themes were accurate reflections of the views of the participants and not the biased views of the researchers (confirmability) (Lincoln & Guba, 1985). In addition, the reflective journal kept by the interviewer helped facilitate the data interpretation process as well as helped to ensure that identified categories fitted the data (Lincoln & Guba, 1985).

Results

The results were consistent across the individual and group interviews and, thus, are organized around the three main topic areas that were used to frame the discussion guide. Furthermore, the prevalence of beliefs elicited were relatively consistent across gender and activity level and, given that the aim of the study was to identify the most commonly held beliefs of parents with young children (see Ajzen, 1991), within each category, the most salient emerging themes expressed across all participants are presented below. Refer to Table 1 for a summary of the key themes, concepts, and the frequencies of statements representing each category across the full sample of parents and across gender and activity level.

Behavioural Beliefs: Advantages and Disadvantages

The most salient advantages of performing regular moderate PA were: improves physical health and fitness (72.5%), improves mental well-being and mood (65%), promotes feeling healthy and good about oneself (57.5%), improves social life (47.5%), and promotes weight loss/control (40%). For example:

“You feel more awake. You feel better. You feel more energetic throughout the day.

The weight doesn't get packed on and things like that. You generally all round feel

better. . . . And certain activities can bring groups together, so you can form friendships and things like that. . . .” [Father]

“Well mental health primarily. The endorphins make me feel happy. . . . I feel better in myself. And I don’t know if it’s me getting to 37, but I did see a little bit of tone muscle. And you know maybe a little less fat around the hips. So there are those benefits as well as just the general feeling of wellbeing really.” [Mother]

Additionally, parents identified benefits to being active that related to their unique circumstances. For example, the theme of improves parenting practices (e.g., being less frustrated with the children, coping better with the children) emerged as salient (42.5%). One father explains, “I’m much more inclined to play with the kids, chasing after them and stuff. And probably even to the extent where I’m less short tempered with them.”

For the behavioural disadvantages, sustaining pain and injury (45%) was commonly identified. However, due to parents’ perceived time pressures, interfering with other commitments (52.5%) (e.g., family and work routines) was the major factor concerning parents in relation to performing regular PA. For example: “If I was to devote the time to physical activity then there’s a potential disadvantage to other compartments like family and work. . . .” [Father]; “In order for me to do regular physical activity I’d have to stop doing certain chores around the house, so it can interfere with things like that. . . .” [Mother].

Another mother explains,

“Well it’s just that there’s a lot of time pressure when you’re a mum, there is always something else you could be doing. So to say, “oh I’m just going to take this hour to go and do some exercise”, but you know you could really be using that hour to be doing lots of other things as well.” [Mother]

Normative Beliefs: Social Pressures

Parents identified many individuals or groups (referents) they believed would approve of performing regular moderate PA. The most salient referents identified were: partners (62.5%), children (42.5%), other family members (42.5%), friends (32.5%), and people I exercise with (32.5%). The latter referent group was especially salient for those parents who were regularly active. It should be noted, however, that for some parents inherent paradoxes were associated with these normative beliefs. Specifically, for some mothers, it was believed that partners would approve of behavioural performance if it did not impinge on the partner's time; otherwise, the partner was then viewed as disapproving of the behaviour. One mother explains, "I think my husband does and he doesn't. He would like me to physically exercise if it was something I'd want to do as long as it didn't impact on too much on his responsibilities." For some fathers, however, it was believed that partners would approve of them engaging in regular PA if it was integrated with the family and not performed independently; otherwise, the partner was then viewed as disapproving of the behaviour. One father explains, "My wife . . . if I took up sport that I played by myself she'd probably jump up and down a bit." Children were also viewed as either approving or disapproving of the behaviour, and this perception was held despite the child's age and/or ability to verbalise their approval or disapproval. In particular, spending time with the children was positively viewed by those parents who believed children would approve of parents being active, as one mother explains, "My kids obviously would want me to be active because they can join me." Conversely, spending time away from the children so one could engage in more independent PA was negatively viewed by those parents who believed children would disapprove of parents being active, as another mother explains, "My kids would discourage it because from their point of view I'm not here. They don't really care why I'm not really here, they just care that I'm not here. So my kids would disapprove."

In addition to social pressures, further probing questions suggested that the attitudes and behavioural performance of significant others may facilitate parents' motivation to be active in that they provide a sense of "competition", "challenge", and "personal expectation" to improve PA levels. Many individuals and referents were described as providing this normative influence (e.g., family members, team-mates, friends, work colleagues, neighbours); however, many parents believed that it is other parents of young children that influence their activity performance. This group was described as understanding the difficulties faced with having a young family as one mother explains, "They would have to be active people who have two preschool aged kids as opposed to active people with no responsibility. . . . They're all in the same boat, so at least you feel they understand your situation", and were perceived either to share the belief that "physical activity is important" (which positively influenced one's motivation to be active) or "regular activity is not a priority at this time in life" (which had the opposite effect). In addition, a few mothers expressed that being surrounded by active parents of young children lessened the guilt for engaging in PA. One mother explains, "I guess because other mums are doing it, it lessens the whole guilt thing. Because you think okay you're going [gym], your life's still kicking on, the kids aren't malnourished or anything, you know."

Control Beliefs: Facilitating and Inhibiting Factors

The most frequently reported control beliefs inhibiting regular PA were: tiredness and fatigue (57.5%), inconvenience/inflexibility (52.5%) (e.g., children's routine, lack of access to integrative parent/child facilities, weather, other commitments), lack of motivation (45%), cost (35%), and illness and injury (32.5%). The control belief of inconvenience/inflexibility and illness and injury were especially salient for the mothers of this study and resulted from perceptions about their child/children's routine and ill health as well as to their own commitments and experiences of illness and injury as inhibiting their ability to engage in

regular activity. However, the biggest constraint that parents of young children face in regards to being regularly active is lack of time (77.5%), and this lack of time primarily is due to fulfilling childcare commitments although lack of time due to commitments to partners, work, and household chores was also acknowledged. As one mother explains, “I suppose I don’t have the time, other things get in the way... Like work, doing household stuff, looking after the family and husband, cooking, grocery shopping, you know all the bits and joys of living.”

Consistent with the inhibiting factors, convenience/flexibility (65%) and time (40%) were commonly identified as control beliefs facilitating regular PA with the latter belief of having more time being more salient for those parents who were not regularly active. Social support (70%) (e.g., childcare, having someone to be active with), however, was the most frequently reported facilitator, particularly for mothers’ activity performance. Pleasure (40%) (e.g., having fun, enjoying the activity) was also identified as a facilitator for regular activity with some of the data suggesting that an inherent enjoyment of the activity itself is also motivating. One mother explains, “That’s why I try to make everything I do exercise. Like housework, I actually sweat it out and I push myself so hard. And it’s hard, but I love it.” One father also explains, “I enjoy it, I really do enjoy it.”

<insert Table 1 about here>

Discussion

The literature has established that underlying beliefs play an important role in health behaviour decision-making (Dunn et al., 2008; Foraker et al., 2005; Mason & White, 2008) including PA (Hamilton & White, 2007; Hardy & Grogan, 2009), and this study shows that underlying beliefs are also important to consider for parents of young children. Research and, in particular, theoretical approaches to the understanding of parental PA are scarce (Bellows-Riecken & Rhodes, 2008). The aim of this study, therefore, was to gain insight into the

beliefs that underlie parents' PA decision-making using the TPB as a theoretical framework. To achieve this aim, the study sought to explore the beliefs of both mothers and fathers with a broad range of experiences and identify among this target population the most commonly held beliefs (see Ajzen, 1991). The TPB model is a well validated model within the PA domain (Hagger et al., 2002); thus, the first step in applying the TPB framework to parental PA is to identify salient beliefs of the target population (Ajzen, 1991). From a TPB perspective, the study shows that behavioural, normative, and control beliefs underlie the decision-making processes of parents of young children to engage in regular moderate PA. Specifically, parents were able to identify physical, psychological, and social benefits to performing regular PA. In addition, parents were able to identify benefits of performing regular PA that related specifically to their unique circumstances (e.g., improving parenting practices). Disadvantages to performing regular PA were also identified. In particular, parents perceived PA as interfering with their family and work commitments. For the majority of parents, partners and children were identified as approving of the behaviour; however, these particular referents could also be perceived as disapproving of the behaviour. Parents were also able to describe many barriers to performing regular PA; however, time constraints were identified as the biggest inhibitor. Overall, using a TPB approach, this study gained insight into the PA-related beliefs of both mothers and fathers with young children and, thus, adds to the scant literature investigating this at risk group as well as provides the necessary data that can inform the development of survey instrumentation to explain, as well as predict parental PA behaviour.

Consistent with research in the PA domain (Symons Downs & Hausenblas, 2005), parents identified physical, psychological, and social benefits to performing regular PA. Parents, however, also identified unique advantages for being regularly active including helping to build family togetherness and improving parenting practices. These findings

suggest that parents have distinctive attitudinal beliefs that underlie their PA decision-making and are consistent with research suggesting that being active may have positive effects on parenting practices such as helping to cope with the challenges of being a parent (Lewis & Ridge, 2005; Sampselle, Seng, Yeo, Killion, & Oakley, 1999).

A range of people (e.g., family members and friends) was identified as sources of pressure for being regularly active, which is consistent with previous research (Symons Downs & Hausenblas, 2005). Specific to this target group, however, it was identified that the beliefs underlying this pressure are not consistent. Specifically, the study shows that some parents perceive partners and children as both approving and disapproving of regular PA performance. This finding has important implications for intervention work in which messages designed to pressure parents into being active should be framed in a way that children will approve as it is spending time with them, mothers will approve as fathers can integrate the activity with the family, and fathers will approve as the activity does not necessarily need to encroach on their time. Furthermore, given that parents hold mixed beliefs toward social pressures to engage in regular activity (i.e., significant others are perceived as both approving and disapproving of behavioural performance) might raise questions as to the conceptualisation of subjective norms in traditional TPB instrumentation. Researchers examining the effect of attitudinal ambivalence (i.e., holding both positive and negative evaluations toward a given behaviour) within the TPB have shown an attenuation effect in the attitude-intention relationship from people with higher levels of ambivalence compared to those with lower levels (see Sparks, Conner, James, Shepherd, & Povey, 2001); thus, it might be useful for future research to explore the concept of normative ambivalence and the effect it might have on the subjective norm-intention relationship.

In addition to social pressures, parents also identified that the opinions and behaviours of other referents, in particular others with young children, were an important influence on

their PA behaviour. This finding, which was identified as a unique belief held specific to this population, suggests that parents may use information about other people's behaviour in deciding to be active and, for mothers, might lessen their guilt for engaging in regular physical activity. This finding is consistent with the descriptive norm component of the TPB in which the perceptions of others' behaviours are considered important in determining people's behavioural performance (see Ravis & Sheeran, 2003). Alternatively, given that other parents of young children was often described as the group parents would compare themselves to in relation to their activity performance, the finding might be considered consistent with a social identity (Hogg & Abrams, 1988) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) perspective. Thus, the explicit or implicit prescriptions regarding one's appropriate attitudes and behaviours as a member of a specific reference group in a specific context (White, Hogg, & Terry, 2002) are considered influential for one's behavioural decision-making and is consistent with research in the PA domain (Hamilton & White, 2008). Therefore, considering the influence of descriptive norms or, more specifically, the influence of ingroup norms such as the normative influence of other parents with young children on parents' PA, seems warranted.

Parents were also able to describe many barriers to performing regular PA, which is consistent with previous research (Symons Downs & Hausenblas, 2005), and suggests that preventative intervention work should target action at different social ecological levels of health promotion (see McLeroy et al., 1988). At the individual level, health promoters could highlight PA as fun, enhancing energy levels to combat fatigue and lack of energy, and cost effective with activities such as brisk walking cited as one of the best and most popular activities to perform to obtain health benefits (Australian Bureau of Statistics, 2006; Haskell et al., 2007). At the policy level, programs could be put in place to create more socially supportive environments (particularly for mothers) as well as help parents to gain better

access and flexible opportunities for activity performance. Time, however, was identified as the biggest inhibitor for both sexes. Time is consistently identified in the literature as impeding PA performance (McIntyre & Rhodes, 2009; Symons Downs & Hausenblas, 2005); however, little is known of the reasons for this lack of time. Distinctive to this population, the current study identified that commitments to children, in particular, are the reasons for the lack of time and suggests that parenthood may be the reason why previous research has found control beliefs to be more salient for younger adults than for older adults who are generally no longer responsible for caring for young children (see Rhodes, Blanchard, & Blacklock, 2008) where it is suggested that younger children, as opposed to older children, require more parental time to attend to their care and attention needs (Bellows-Riecken & Rhodes, 2008). Given that research investigating mothers' PA found that current PA recommendations can be met if one spends just one fifth of 'sitting' leisure time engaged in moderate activity (NSW Health, 2003), health promoters should focus on helping parents identify ways to be active in this time.

Additionally, the results show evidence to suggest that an inherent enjoyment for the behaviour is also motivating, suggesting that being internally motivated may help facilitate behavioural performance. Although this finding is not explained via the TPB model, it is consistent with a self-determination theory perspective (Deci, Eghrari, Patrick, Leone, 1994) and may warrant further investigation of the influence of internal motivation on parents' PA. It should be noted also that enjoyment as a facilitator for activity performance was identified as an advantage for undertaking regular PA. Previous research investigating the conceptualisation of the perceived difficulty (otherwise termed self efficacy) component of perceived behavioural control have suggested that the concept overlaps with the affective component of attitudes (see Kraft, Rise, Sutton, & Røysamb, 2005). Given that enjoyment is considered to encompass the affective determinant of global attitudes toward a given

behaviour (see Ajzen, 1991), in this study the identification of enjoyment as both an advantage (i.e., behavioural belief) and facilitator (i.e., control belief) of activity performance might support the suggestion that perceived difficulty is conceptually a reflection of affective attitudes. It might be useful, then, for future research to continue to explore the potential overlap between these two constructs.

Study Limitations and Strengths

A number of factors may serve to limit the study's scope and generalisability of the findings. The discussion/interview guide used open-ended questions; however, the topics were predetermined by the structured format of the TPB framework which may have limited the study's scope. For example, the focus of social influences within the TPB is on normative pressures and, as such, limits exploring the effect of other social influences such as the influence of social role expectations on parents' PA. Furthermore, participants were Caucasian which may limit transferability of the data across different cultural groups. Future research, then, is needed to confirm these findings and expand on the identified themes with individuals from a wide range of ethnic backgrounds. Additionally, the snowball recruitment method might have resulted in a sample bias as participants might have similar perceptions to the individuals recruiting them (Brace-Govan, 2004); however, consideration was given to obtain an information rich sample. Finally, the aim of the study was to establish a broader base of underlying beliefs that is generalisable to the target population (see Ajzen, 1991). We did, however, identify the beliefs of parents across gender and activity level and, although the prevalence of beliefs was relatively similar across the subgroups, it is important to recognise that the results of this study are more suggestive than affirmative in that qualitative research aims to gain an in-depth understanding of a particular phenomena through the subjective views of its participants and does not aim to look for objective truths. Future research, then, should continue to explore the belief-based determinants of attitude, subjective norms, and

perceived behavioural control components of the TPB to establish if distinctions in behavioural, normative, and control beliefs exist between sub-samples of parents, especially in the prediction of physical activity intentions and/or behaviour. Despite these limitations, this study investigated both mothers' and fathers' PA beliefs using a well validated theoretical framework. This study, therefore, provides a balance of ideas for understanding the underlying issues and has the major strengths of using an established theoretical framework to investigate an at-risk group within the PA domain that is currently not well understood or researched.

Conclusion

This study provides the first step in understanding the underlying beliefs that guide parental PA decision-making in which clear behavioural, normative, and control beliefs were identified. Parents identified a range of underlying beliefs, some of which are consistent with previous literature examining PA beliefs in general. However, parents of young children also identified unique perspectives about PA participation, such as the benefit of improving parenting practices, the social motivators of pressure from children and normative behaviour from other parents, and the barrier of time which is related to the commitments to the children, that relate to their specific circumstances. These parent-specific beliefs should be considered when designing interventions aimed at increasing parental PA. For example, health messages could portray parents as being more tolerant with their children after going for a brisk walk, express the voices of children as wanting their parents to be active, or show images of groups of parents with younger children being active, thus highlighting the behaviour as being normative among this target group. Furthermore, messages could emphasise ways parents can be active that does not necessarily interfere with the time that is required to fulfil their other commitments, such as doing housework more vigorously, playing more energetic games with the children, using the work lunch hour to go for a walk, or using

the weekend to do more physical activity. Overall, this study was able to identify that parents of young children have unique perspectives about PA participation. These identified beliefs can be used to inform strategies and interventions to challenge inactivity among this at-risk group.

Conflict of interest statement

None.

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Table 1.

Summary of Key Themes, Concepts, and Frequencies of Behavioural, Normative, and Control Beliefs across the Full Sample of Parents (N = 40) and across Gender and Activity Level.

Concept	Key themes	Total (N = 40)	Mother (n = 21)	Father (n = 19)	Regularly active (n = 17)	Not regularly active (n = 23)
<i>Behavioural Beliefs</i>		N ^a	n ^a	n ^a	n ^a	n ^a
Advantages						
	Improves physical health and fitness	29 (72.5%)	15 (71%)	14 (74%)	12 (71%)	17 (74%)
	Improves mental wellbeing and mood	26 (65%)	16 (76%)	10 (53%)	12 (71%)	14 (61%)
	Promotes feeling healthy and good about oneself	23 (57.5%)	13 (62%)	10 (53%)	8 (47%)	15 (65%)
	Improves social life	19 (47.5%)	7 (33%)	12 (63%)	8 (47%)	11 (48%)
	Improves parenting practices	17 (42.5%)	9 (43%)	8 (42%)	7 (41%)	10 (43%)
	Promotes weight loss/control	16 (40%)	8 (38%)	8 (42%)	5 (29%)	11 (48%)
	Promotes family togetherness	12 (30%)	4 (19%)	8 (42%)	4 (24%)	8 (35%)
	Increases energy	12 (30%)	7 (33%)	5 (26%)	6 (35%)	6 (26%)
	Is fun	12 (30%)	3 (14%)	9 (47%)	7 (41%)	5 (22%)

	Improves appearance	10 (25%)	7 (33%)	3 (16%)	5 (29%)	5 (22%)
Disadvantages						
	Interferes with other commitments	21 (52.5%)	14 (67%)	7 (37%)	7 (41%)	14 (61%)
	Pain and injury	18 (45%)	8 (38%)	10 (53%)	9 (53%)	9 (39%)
	Cost (expensive)	8 (20%)	5 (24%)	3 (16%)	4 (24%)	4 (17%)
<i>Normative Beliefs</i>						
Approve						
	Partner	25 (62.5%)	13 (62%)	12 (63%)	10 (59%)	15 (65%)
	Children	17 (42.5%)	6 (29%)	11 (58%)	8 (47%)	9 (39%)
	Other family members	17 (42.5%)	8 (38%)	9 (47%)	8 (47%)	9 (39%)
	Friends	13 (32.5%)	8 (38%)	5 (26%)	8 (47%)	5 (22%)
	People I exercise with	13 (32.5%)	7 (33%)	6 (32%)	9 (53%)	4 (17%)
	Healthcare agencies and professionals	10 (25%)	6 (29%)	4 (21%)	3 (18%)	7 (30%)
	Work colleagues	7 (17.5%)	2 (10%)	5 (26%)	2 (12%)	5 (22%)
Disapprove						
	Partner	9 (22.5%)	4 (19%)	5 (26%)	2 (12%)	7 (30%)

	Children	8 (20%)	5 (24%)	3 (16%)	2 (12%)	6 (26%)
<i>Control Beliefs</i>						
Facilitators						
	Social support	28 (70%)	20 (95%)	8 (42%)	14 (82%)	14 (61%)
	Convenience/flexibility	27 (67.5%)	16 (76%)	11 (58%)	10 (59%)	17 (74%)
	More time	16 (40%)	7 (33%)	9 (47%)	3 (18%)	13 (57%)
	Pleasure	16 (40%)	10 (48%)	6(32%)	7 (41%)	9 (39%)
	<ul style="list-style-type: none"> • having fun, enjoyment 	11 (27.5%)	5 (24%)	6 (32%)	4 (24%)	7 (30%)
	<ul style="list-style-type: none"> • inherent love for the activity 	9 (22.5%)	7 (33%)	2 (11%)	6 (35%)	3 (13%)
	Motivators from the children (e.g., active child)	10 (25%)	5 (24%)	5 (26%)	6 (35%)	4 (17%)
	Money	9 (22.5%)	7 (33%)	2 (11%)	2 (12%)	7 (30%)
Barriers						
	Lack of time	31 (77.5%)	16 (76%)	15 (79%)	11 (65%)	20 (87%)
	Tiredness and fatigue	23 (57.5%)	14 (67%)	9 (47%)	9 (53%)	14 (61%)
	Inconvenience/inflexibility	21 (52.5%)	15 (71%)	6 (32%)	9 (53%)	12 (52%)
	Lack of motivation	18 (45%)	9 (43%)	9 (47%)	5 (29%)	13 (57%)

	Cost	14 (35%)	9 (43%)	5 (26%)	5 (29%)	9 (39%)
	Illness and injury	13 (32.5%)	11 (52%)	2 (11%)	4 (24%)	9 (39%)
	Lack of social support	9 (22.5%)	8 (38%)	1 (5%)	2 (12%)	7 (30%)

^a Frequencies used to quantify categories reflect the presence of the belief for a participant (not the number of times that a single participant expressed the same belief)